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44. Proposed by P. S. BERG, Principal of Schools, Larimore, North Dakota.

Two trees whose heights are 40 and 80 feet, respectively, stand on opposite sides of a stream 30 feet wide. What path does a squirrel take in leaping from the top of the higher to the top of the lower? What is the length of the path?

Solution by G. B. M. ZERR, A. M., Ph. D., Texarkana, Arkansas.

The path is a parabola. Let the top of the higher tree be origin, "across the river" positive, v=velocity, β=angle of projection, then the equation is $y=\tan\beta x-gx^2/(2v^2\cos^2\beta)$, in which we must know either v, or β. Substituting $x=30$, $y=-40$ we get

$$v^2=45g/(4\cos^2\beta+3\sin\beta\cos\beta)\ldots\ldots\ldots\ldots\ldots\ldots\ldots(1).$$

$$S=\frac{1}{v^2\cos^2\beta}\int_0^{30}\sqrt{v^4\cos^4\beta+(gx-v^2\sin\beta\cos\beta)^2}\,dx.$$

Let $v^2\cos^2\beta=a$, $gx-v^2\sin\beta\cos\beta=y$, $30g-v^2\sin\beta\cos\beta=y_1$, $-v^2\sin\beta\cos\beta=-y_2$.

$$\therefore\ S=\frac{1}{ag}\int_{-y_2}^{y_1}\sqrt{a^2+y^2dy}$$

$$=\frac{1}{2ag}\{y_1\sqrt{a^2+y_1{}^2}+y_2\sqrt{a^2+y_2{}^2}\}+\frac{a}{2g}\log[(\sqrt{a^2+y_1{}^2}+y_1)/(\sqrt{a^2+y_2{}^2}-y_2)]$$

Let $\beta=45°$; then $v^2=90g/7$, $y_1=165g/7$, $y_2=45g/7=a$.

$\therefore\ S=\frac{5}{14}(11\sqrt{130}+9\sqrt{2})+\frac{45}{14}\log[(\sqrt{130}+11)/(3\sqrt{2}-3)]$.

Let $\beta=0$; then $v^2=45g/4$, $y_1=30g$, $y_2=0$, $a=45g/4$.

$\therefore\ S=5\sqrt{73}+\frac{45}{8}\log[(\sqrt{73}+8)/3]$.

NOTES.

INTERNATIONAL CONGRESS OF MATHEMATICIANS AT ZURICH IN 1897.

"It is known that the idea of an international congress of mathematicians has been, above all in these latter days, the object of numerous deliberations on the part of scientists interested in its realization. It has appeared to them, by reason of the excellent results obtained in other scientific domains by an international 'entente', that assuring the execution of this project would have very weighty advantages.

As outcome of a very active exchange of views, accord was reached on a prime point. Switzerland, by its central geographic situation, by its traditions and its experience of international congresses, appeared designated to invite a first attempt at a reunion of mathematicians. In consequence Zurich is chosen as seat of the Congress.

The mathematicians of Zurich do not disguise from themselves the difficulties they will have to surmount. But in the interest of this enterprise, they have thought it their duty not to decline the overtures so flattering that have been made them from all sides. They have decided therefore to take all preparatory measures for the future congress and, to the extent of their powers, to contribute to its success. So, with the concurrence of mathematicians of other nations, was formed the undersigned committee of organization, charged *to bring together at Zurich in* 1897 *the mathematicians of the entire world.*

The congress, in which you are cordially invited to take part, will take place at Zurich the 9, 10 and 11 of August, 1897, in the halls of the federal polytechnic school. The committee will not fail to communicate to you, in time opportune, the text of the program determined, begging you to inform them of your adherence. But even at present it may be said that the scientific works and questions of administration will pertain to subjects of general interest or recognized importance.

Scientific congresses have also this precious advantage, to favor and keep up personal relations. The local committee will not fail to accord all its solicitude to this part of its task, and, with this aim, it will elaborate a modest programme of fêtes and intimate reunions.

May the hopes reposed in this first congress be fully realized! May numerous participants contribute by their presence to create, among colleagues, not alone coherent scientific relations, but also cordial bonds based on personal acquaintance! Finally, may our congress serve the advancement and the progress of the mathematical sciences!"

The invitation of which the above is a translation is signed by eleven from Zurich and ten associates, as committee.

Readers of the AMERICAN MATHEMATICAL MONTHLY already know the persistent efforts of Vasiliev of Kazan and Laisant of Paris to establish this congress.

It is matter for rejoicing that their noble endeavors have been crowned with this definite success. GEORGE BRUCE HALSTED.

THE SAME OLD BLUNDER.

In the *Nation* of November 26, 1896, in a review of Cajori's History of Elementary Mathematics, the reviewer himself makes a blunder so appalling that it should not go unnoticed.

He says Cajori "does not name Prof. J. J. Littrow of Vienna, whose demonstration is yet worth notice. Littrow proves first that the three angles of a triangle are $=2R$. Thus: When a side α and angles BC are given, angle A is determined; it is $=F(\alpha BC)$; and as an angle may be viewed as an abstract number, it has no relation to one measure in space: angle $A=F(BC)$ simply," etc.

Now where has the *Nation's* reviewer been buried not to know that this very pseudo-proof was given by Legendre, and its fallacy shown by George Paxton Young in the *Canadian Journal* for November, 1856, forty years ago, and again in the *Canadian Journal* for July, 1860, pages 356-358 ?

GEORGE BRUCE HALSTED.

Austin, Texas.

James Joseph Sylvester, the great mathematician, Sivilian professor of geometry at Oxford, formerly professor of mathematics at the Johns Hopkins University, and in 1841 at the University of Virginia, died in London on March 15th, aged eighty-three years. Also the eminent mathematician Dr. Karl Weierstrass, died at Berlin on February 19th, aged eighty-one years. In the death of these two men, mathematics sustains a great loss. Both did much to broaden and deepen mathematical knowledge. Sylvester has written much on invariants, the theory of equations, theory of partitions, multiple algebra, the theory of numbers, the theory of reciprocants, etc., while Weierstrass has given special attention to the theory of functions of a complex variable. For a biography of Sylvester, by Dr. Halsted, see MONTHLY, Vol. I., No. 9. B. F. F.

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BOOKS.

Composite Geometrical Figures. By George A. Andrews, A. M. 63 pages. Price 55 cents. Ginn and Company, Boston, and London. 1896.

The figures in this little book are constructed for the demonstration of more than one proposition. Ten of the figures are designed for review work, while the last general figure is intended for re-review work of all the theorems of plane geometry. Under each figure are illustrative demonstrations, followed by series of easy examples which require the pupil to apply the general principles of geometry to the specific conditions of the figures. It will be seen that the book is not designed to take the place of other text-books, but is intended to be used with them for reviews and for supplemental easy original work. The plan of the work is rather unique, and it will be useful to teachers who feel the need in their classes for the specific application of geometrical principles. J. M. C.

National Geographic Monographs: (1) *Physiographic Processes*, by J. W. Powell ; (2) *Physiographic Regions of the U. S.*, by J. W. Powell ; (3) *Lakes and Sinks of Nevada*, by I. C. Russell ; (4) *Mt. Shasta*, by J. S. Diller. Price 20 cents each, or $1.50 for a set of ten. American Book Company, New York, Cincinnati, and Chicago.

These monographs on the physical features of the earth's surface furnish fresh and interesting material with which to supplement the regular text books. They have been written with exceptional care and ability and are not only very serviceable for such use, but are very interesting to the general reader as well. J. M. C.